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Peritonsillar Infiltration with Tramadol or Bupivacaine for Relief of Post-Tonsillectomy Pain in Children: A Randomized Clinical Study

[1]Dr. Ajit Pal Singh Sodhi, Postgraduate Student, 3rd Year, Department of ENT, ASCOMS Hospital, Sidhra, Jammu

[2]Dr. Tanisha Arora, MBBS, MS ENT, ASCOMS Hospital, Sidhra, Jammu

[3]Dr. Priyanka Mahajan, MBBS, MS ENT, Senior Resident, Department of ENT, ASCOMS Hospital, Sidhra, Jammu

[4]Dr. Padam Singh Jamwal, Professor & HOD, Department of ENT, ASCOMS Hospital, Sidhra, Jammu

Corresponding Author: Dr. Priyanka Mahajan, MBBS, MS ENT, Senior Resident, Department of ENT, ASCOMS Hospital, Sidhra, Jammu.

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Abstract

Background: Tonsillectomy, a routine paediatric procedure, is frequently accompanied by significant postoperative pain. Efficient pain control is essential to minimize morbidity. Peritonsillar infiltration of tramadol or bupivacaine may offer an effective localized analgesic alternative.

Objective: To compare the analgesic efficacy and safety of tramadol and bupivacaine peritonsillar infiltration in children post-tonsillectomy.

Methods: A randomized, double-blind, placebo-controlled study involving 90 children (aged 5–12 years) undergoing tonsillectomy was conducted. They were divided into:

Group T: Tramadol 2 mg/kg (2 mL/tonsil)

Group B: Bupivacaine 0.25% (2 mL/tonsil)

Group C: Placebo (2 mL normal saline)

Pain was assessed using the Wong-Baker FACES Pain Rating Scale at 1, 4, 8, 12, and 24 hours postoperatively. Secondary outcomes included time to first rescue analgesic and total analgesic consumption.

Results

Both tramadol and bupivacaine groups had significantly lower pain scores versus placebo at all-time points ($p < 0.05$). Tramadol offered longer analgesia:

- Tramadol: 8.2 ± 1.4 h to first rescue
- Bupivacaine: 6.7 ± 1.8 h
- Placebo: 3.2 ± 1.1 h

Total paracetamol use over 24 hours was significantly reduced:

- Tramadol: 225 ± 75 mg
- Bupivacaine: 275 ± 80 mg

- Placebo: 450 ± 100 mg

No serious side effects were observed.

Keywords: bupivacaine, dehydration, Tonsillectomy

Introduction

Tonsillectomy remains one of the most common paediatric ENT surgeries. However, postoperative pain is a major deterrent to recovery, leading to poor oral intake and risk of dehydration. While systemic analgesics remain the standard, they can produce adverse effects.

Peritonsillar infiltration with local anaesthetics and opioid derivatives offers a targeted, effective alternative. Tramadol, with both central and local analgesic effects, and bupivacaine, a long-acting local anaesthetic, are promising agents.

Materials and Methods

Study Design

Prospective, randomized, double-blind, placebo-controlled

Population

- 90 children, ASA I–II, aged 5–12 years
- Undergoing cold dissection tonsillectomy
- Excluded: allergies, neurological illness, coagulation disorders, chronic analgesic use

Groups

- Group T: Tramadol (2 mg/kg per tonsil)
- Group B: Bupivacaine (0.25%, 2 mL per tonsil)
- Group C: Normal Saline (2 mL per tonsil)

Assessment Tools

- Wong-Baker FACES scale
- Time to first rescue analgesic
- Total 24-hour paracetamol consumption
- Side effect monitoring

Statistical Analysis

SPSS v26, ANOVA, and Chi-square tests; $p < 0.05$ deemed significant

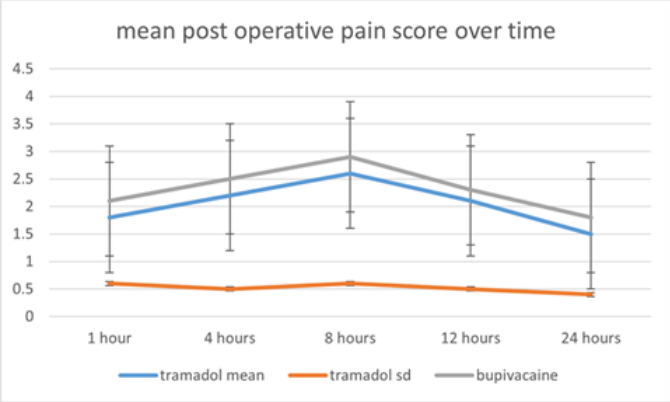
Results

Mean Pain Scores

(Wong-Baker FACES Scale)

Time Post-Op	Tramadol	Bupivacaine	Placebo
1 hour	1.8 ± 0.6	2.1 ± 0.7	3.5 ± 0.9
4 hours	2.2 ± 0.5	2.5 ± 0.6	3.8 ± 1.0
8 hours	2.6 ± 0.6	2.9 ± 0.5	4.2 ± 0.8
12 hours	2.1 ± 0.5	2.3 ± 0.7	3.7 ± 1.2
24 hours	1.5 ± 0.4	1.8 ± 0.6	3.0 ± 1.1

Graph 1:



Analgesic Use

Group	Time to First Rescue	24h Paracetamol Use
Tramadol	8.2 ± 1.4 h	225 ± 75 mg
Bupivacaine	6.7 ± 1.8 h	275 ± 80 mg
Placebo	3.2 ± 1.1 h	450 ± 100 mg

Discussion

Both tramadol and bupivacaine showed statistically significant pain relief versus placebo. Tramadol's prolonged effect may be due to its unique dual mechanism. Bupivacaine was also effective but had a shorter duration.

Clinical Implication

These agents can be safely used intraoperatively to reduce postoperative analgesic burden and improve patient comfort in children.

Limitations

- Single-center study
- Short follow-up
- Subjective pain reporting

Conclusion

Peritonsillar infiltration with tramadol or bupivacaine is a safe, effective strategy for managing post-tonsillectomy pain in children. Tramadol may offer a longer duration of relief. These interventions can minimize systemic analgesic use and facilitate recovery.

References

1. Rajan S, et al. Int J Paediatric Otorhinolaryngology. 2017.
2. Akin A, et al. Int J Paediatric Otorhinolaryngology. 2005.
3. Baradaranfar MH, et al. Middle East J Anaesthesiology. 2010.
4. WHO Guidelines on Paediatric Pain Management. 2022.